A Method of Averaging Nuclear Constants for Calculations of the Fast Reactor, Taking Into Account The Value of Neutrons

78319
SOV/89-8-3-4/32

Table 3. Volume Portions of the Basic Fissionable Isotope ϵ_f in Three Types of Reactors at $K_{eff} = 1$.

(a)	(b) I	(b) II	(b) III	(c)
(d)	0,0512	0,0464	0,0300	
(e)	0,0460	0,0400	0,0260	(10 - 14)
(f)	0,0510	0,0466	0,0300	< 1

Key to Table 3. (a) Method of computation; (b) reactor type; (c) difference from results of spatial computation, %; (d) nine group spacial; (e) single group without taking into account neutron values; (f) single group taking into account neutron values.

Card 9/9

NOVOZHILOV, A. I., Candidate Tech Sci (diss) -- "Investigation of the movement of a vibration machine for packing soil". Leningrad, 1959. 14 pp (Min Higher Educ USSR, Leningrad Order of Labor Red Banner Construction Engineering Inst Chair of "Theoretical Mechanics"), 150 copies (KL, No 24, 1959, 139)

NOVOZHILOV, A.I., kand.tekhn.nauk

Impact speed of a vibration percussion machine. Izv.vys.
ucheb.zav.; mashinostr. no.8:56-68 '62. (MIRA 15:12)

1. Magnitogorskiy gorno-metallurgicheskiy institut.
(Machinery)

NOVOZHILOV, A.I., inzh.

Changing the direction of vibrations originated by eccentric vibrators. Stroi. i dor. mashinostr. no.4:23-24 Ap '58. (MIRA 11:4)

(Vibrators)

NOVOZHILOV, A.I., kand. tekhn. nauk

[Differential equation of the rotation of a body in plane-parallel motion; textbook on theoretical mechanics] Differentsial'noe uravnenie vrashcheniia tela pri ploskoparallel'nom dvizhenii; uchebnoe posobie po teoreticheskoi mekhanike. Magnitogorsk, 1962. 12 p. (MIRA 17:3)

1. Magnitogorsk, Gorno-metallurgicheskiy institut.

L 10673-65 EWT(m)/EWP(e)/EWP(b) Pq-4 AFWL/RAEM(c)/AS(mp)-2/ASD(a)-5/ RAEM(i)/SSD/FSD(gs)/ESD(t)/IJP(c) JD/WH

ACCESSION NR: AP4044278 S/0192/64/005/004/0630/0631

AUTHOR: Novozhilov, A. I.; Samoylovich, M. I.; Tsinober, L. I.

TITLE: Short lived paramagnetic centers in germanium doped quartz

SOURCE: Zhurnal strukturnoy khimii, v. 5, no. 4, 1964, 630-631

TOPIC TAGS: quartz, electron paramagnetic resonance, germanium, unpaired electron, x ray irradiation, γ ray irradiation, germanium doped quartz

ABSTRACT: Germanium doped quartz, irradiated with x-rays or γ-rays produces an EPR spectrum due to unpaired electrons. In addition to EPR spectrum, resulting from the alkali centers a spectrum is observed which consists of six lines. Their intensity decreases with time. When the temperature of the specimen is lowered to 77 K it is possible to resolve the fine structure consisting of 10 lines, which may be explained by the interaction of electron from an alkali center with the nucleus of Ge^{73} isotope. Since splitting is much less than for free germanium atom in the ground state one might conclude that the captured

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237610003-8"

L 10673-65

ACCESSION NR: AP4044278

electron spends the majority of time near the oxygen atoms which surround germanium ion. In this work a study was made of the amplitude of the EPR signal as a function of irradiation dose. In the course of 24 hours the amplitude decreases by a factor of 2. The EPR spectrum completely disappears due to heating of the sample to 250C and also after u.v. irradiation. It was found that the rate of disintegration of alkali centers is significantly dependent on the temperature. If at room temperature complete decomposition of centers required several days, at 523 K it requires only several minutes and at 77 K decomposition does not take place at all. Two probable mechanisms are proposed for decomposition of these centers: (1) recombination of electrons with holes which are produced during irradiation of crystals; (2) transition of unstable centers into stable alkali centers due to diffusion of the compensating alkali metal ions. In addition to the above two spectra another spectrum is detected in germanium doped quartz at 77 K. It has no hyperfine structure with $g_{11} = 1.993 \pm 0.002$ and $g_{\perp} = 1.996 \pm 0.002$. Orig. art. has: 3 figures.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteza mineral'-

Card 2/3

L 10673-65

ACCESSION NR: AP4044278

nogo syrya (All Union Scientific Research Institute for Synthesis of Mineral Raw Materials)

SUBMITTED: 05Sep63 ENCL: 00

SUB CODE: IO, NP NO REF SOV: 001 OTHER: 006

Card 3/3

L 63543-65 EWT(1)/EWP(e)/EWT(m)/EPF(c)/EWP(i)/EPA(w)-2/EWA(m)-2 Pz-6/
Pi-4 IJP(c) WW/GO/AT/WH

ACCESSION NR: AP5016915 UR/0192/65/006/003/0461/0463
538.113

AUTHOR: Samoylovich, M. I.; Novozhilov, A. I.

TITLE: Electron spin resonance in irradiated topaz 15

SOURCE: Zhurnal strukturnoy khimii, v. 6, no. 3, 1965, 461 - 466

TOPIC TAGS: topaz, spectrum spin resonance, ESR spectrum, irradiated topaz

ABSTRACT: Several varieties of Volyn topaz were studied by means of electron spin resonance spectra at 77 and 295K. In all natural blown topaz varieties as well as in samples irradiated with X or gamma rays, the ESR spectrum shows a broad isotropic line with $g = 1.982 + 0.002$ and half-width at 75° with a complex hyperfine structure HFS. The intensity and number of the HFS lines depend on the orientation of the crystal in the magnetic field (see Fig I of the Enclosure). This spectrum is related to the brown color produced by irradiating colorless samples. The spectral line intensity and optical density at first increase symbatically in proportion to the dose, then become saturated at total doses of about 10^6 roentgen. Both the color and ESR spectrum disappear when the samples are

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L 63543-65

ACCESSION NR: AP5016919

heated to 300C. The observed ESR spectrum is described mathematically in terms of the mechanism of W. C. Holton and H. Blum (Phys. Rev., 125, 89, 1962). "In conclusion, the authors express their appreciation to A. A. Shaposhnikov, S. V. Grum-Grzhimaylo, and Yu. V. Pogodin for providing the topaz samples." Orig. art. has: 2 figures and 2 formulas. [08]

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteza mineral'nogo syr'ya, Aleksandrov (All-Union Scientific Research Institute for the Synthesis of Inorganic Raw Materials)

SUBMITTED: 06Oct64 ENCL: 01 SUB CODE: IC NP

NO REF SOV: 001 OTHER: 008 ATD PRESS: 4049

Card 2/3

L 63543-65

ACCESSION NR: AP5016919 ENCLOSURE: 01

Fig. 1. ESR spectrum of irradiated topaz

a - External magnetic field parallel to axis a of the crystal; b - sample turned 7° about (010) axis; c - sample turned 15° about (010) axis.

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L 42887-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6020384 (A) SOURCE CODE: UR/0192/66/007/001/0109/0110

AUTHOR: Samoylovich, M. I.; Novozhilov, A. I.; Dornov-Pegarev, V. F.; Potkin, L. I.

ORG: All-Union Scientific Research Institute of Synthesis of Mineral Raw Materials, Aleksandrov (Vsesoyuznyy nauchno-issledovatel'skiy institut sinteza mineral'nogo syr'ya) 42 41

TITLE: Electron spin resonance of Mn^{2+} in molybdates of scheelite structure 21 21 B

SOURCE: Zhurnal strukturnoy khimii, v. 7, no. 1, 1966, 109-110

TOPIC TAGS: manganese, EPR spectrum, molybdate, calcium compound, cadmium compound 14

ABSTRACT: The ESR spectrum of Mn^{2+} was studied in single crystals of artificial $CaMoO_4$ and $CdMoO_4$ (both of scheelite structure) at 9.4 Mc at room temperature. Some measurements were made at the temperature of liquid nitrogen. The spin-Hamiltonian constants describing the ESR spectra of Mn^{2+} in these compounds are tabulated, and compared with those for scheelite. It is noted that the replacement of the anionic groups has practically no effect on the g factor; however, the latter does change slightly when the cations are replaced, the anion being the same. The spin-Hamiltonian constant describing the effect of the intracrystalline field of cubic symmetry changes with the anionic groups, but remains virtually unchanged when the cations are replaced. Constant b_2^0, which describes the effect of the intracrystalline field of tetragonal symmetry (the axis of symmetry coincides with the z axis), changes markedly

UDC: 538.113

Card 1/2

L 42887-66

ACC NR: AP6020384

with any replacements. For all the crystals, $b_4^4 \approx 10b_4^0$, i. e., the surroundings of Mn^{2+} are other than cubic. The ESR spectrum of Mn^{2+} in $CdMoO_4$ shows lines due to the forbidden transitions $\Delta m = \pm 1$. Authors take this opportunity to thank L. I. Tsinober for his attention to this work. Orig. art. has: 1 table and 1 formula.

SUB CODE: 20,07/ SUBM DATE: 24Apr65/ OTH REF: 003

Card 2/2 bdk

ACC NR: AP7000787 (N) SOURCE CODE: UR/0089/66/021/ /0360/0363

AUTHOR: Lytkin, V. B.; Troyanov, M. F.; Novozhilov, A. I.

ORG: none

TITLE: Use of the method of calculated losses to choose the characteristics of a fast reactor

SOURCE: Atomnaya energiya, v. 21, no. 5, 1966, 360-363

TOPIC TAGS: fast reactor, nuclear reactor characteristic, nuclear reactor operation, plutonium

ABSTRACT: The authors describe a method of using the theoretical fuel-consumption formulas for the analysis of the economics of the fuel cycle of a fast plutonium reactor. The basic formula employed takes care of the initial fuel cost, the efficiency factor, and the fuel component of the cost of electricity generated during the stationary conditions (with credit for fuel reprocessing and for plutonium). The proposed formula also takes into account the prolonged stay of the fissioning material in the full cycle of the active zone and the screens. Results of calculations are presented, in which the dependence of the fuel component of the calculated expenditures on the heat load and on the "compacting" of the active zone of the reactor of 1000 Mw rated power, is made evident. The formula takes into account the change in the cost of the fuel during the time it stayes in the reactor and time delays in the return of the fuel for reprocessing, and also in the exctraction of the plutonium

Card 1/2 UDC: 338.4: 621.039.516.4

ACC NR: AP6000787

from the screens. Plots are presented of the dependence of the amount of plutonium in the fuel cycle of the active zone and the annual consumption in the fuel elements on the energy load of the active zone, of the dependence of the fuel components of the calculated expenditures and the doubling time on the heat rate, and of the dependence of the fuel component on the ratio of the diameter of the active zone to its height. Examples are presented to show that the method yields a good estimate of the relative roles of the initial investiment in the fuel cycle and the running expenses of the fuel cycle, and consequently makes it possible to choose more correctly the optimal characteristics of the reactor. The authors thank A. I. Leypunskiy and V. V. Orlov for interest in the work and useful discussions, and G. S. Filatov for help with the calculations. Orig. art. has: 3 figures and 3 formulas.

SUB CODE: 18/ SUBM DATE: 01Apr66/ ORIG REF: 007

Card 2/2

15.8500

S/191/60/000/009/008/010
B013/B055

AUTHORS: Ratner, S. B., Frenkel', M. D., Novozhilov, A. V.

TITLE: Mechanical Testing of Plastics. 5. Testing of Heat Resistance

PERIODICAL: Plasticheskiye massy, 1960, No. 9, pp. 69 - 76

TEXT: This publication deals with heat resistance tests of plastics based on the widespread thermomechanical testing methods, i.e., the examination of changes in mechanical properties produced by temperature changes (Figs.1 - 7, Tables 1 - 4). The upper limit of heat resistance of vitrified plastics is the temperature range at which rapid softening occurs. For these plastics the softening point corresponds to the vitrification point $T_{vitr.}$. With crystalline polymers, the limit of heat resistance is not the $T_{vitr.}$ but practically coincides with the melting point (Ref.1). It is generally known (Ref.2) that the $T_{vitr.}$ is no matter constant since it varies with test conditions. The softening process is strongly affected by the load (Refs.15-17). In the case of some thermo-

JC

Card 1/3

Mechanical Testing of Plastics. 5. Testing of Heat Resistance S/191/60/000/009/008/C10 B013/B055

plasts, softening was observed to be a linear function of the load (Refs.15,17). Various thermosetting materials exhibited the same dependence (Figs.2 and 3). It was shown that the softening point drops with increasing load according to $T = T_0 - bP$, where T_0 = softening point without load, and b = change in heat resistance per unit load. Since T_c is a characteristic load-independent vitrification point of the material, it must correspond to the vitrification point determined by any method unaffected by other factors, e.g., dilatometrically. This is the case both with thermosetting plastics (Fig.4) and thermoplasts. These data show that the dilatometric method may be recommended for testing heat resistance. It must, however, be noted that its lower sensitivity renders it less effective than the method of thermomechanical curves. The most complete characterization of the heat resistance requires determination of T_0 and b. For this, tests at 2 - 3 different loads, at the minimum, are necessary. Industrial methods generally apply only one and the same load (P = const) for testing different types of materials. This results in more or less fortuitous test results which are high for hard materials and low for soft materials. In rapid quality control it is advisable to test heat resistance

Card 2/3

at a load proportional to the initial hardness of the material, i.e., at equal initial deformation (ε_0 = const) (Fig.5, Table 2). Widely differing indices are obtained by heat resistance tests under different preset conditions (P = const or ε_0 = const) (Figs.6 and 7, Tables 3 and 4). Apart from regulations concerning the general characteristic, the temperature of heat resistance, specifications should also include regulations concerning the heat resistance coefficients of durability and other indices, in accordance with the application of the material or the working conditions the product is to be subjected to. A. P. Aleksandrov is mentioned. There are 7 figures, 4 tables, and 29 references: 23 Soviet, 3 German, 2 US, and 1 Czechoslovakian.

/C

(A) L 13360-66 EWT(m)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP6002472 SOURCE CODE: UR/0191/66/000/001/0009/0010

AUTHORS: Novoshilov, A. V.; Rotenberg, I. P.; Vakhtin, V. G. 37

ORG: none B

15 15,44,55

TITLE: Production of polyvinylchloride foam-plastic from a nonvolatile monomer

SOURCE: Plasticheskiye massy, no. 1, 1966, 9-10

TOPIC TAGS: polymer, polyvinyl chloride, resin, foam plastic, vinyl plastic, plastic industry/ PKhV1 plastic

ABSTRACT: To prevent the loss of methylmethacrylate and ammonium carbonate, incurred in the conventional manufacture of polyvinyl foam-plastics, the volatility of a number of methacrylic acid esters was determined with the view of selecting less volatile substances. The volatilities (at 40C) of methyl, amyl, n-chloroethyl, isoamyl, hexyl, octyl, and β-oxyethyl were determined, and the experimental results are presented graphically (see Fig. 1). Two foam-plastics were produced, using β-oxyethyl and cyclohexyl methacrylic esters respectively. The ratio of ingredients and the experimental conditions were similar to those used in the industrial manufacture of foam-plastic PKhV-1.[15] Specific volume, strength limit, specific impact viscosity, linear shrinkage, water absorption, and alkali and chloride ion content of the two plastics were determined, and the results tabulated. It is concluded that the

Card 1/2 UDC: 678.743.22-496

L 13360-66

ACC NR: AP6002472

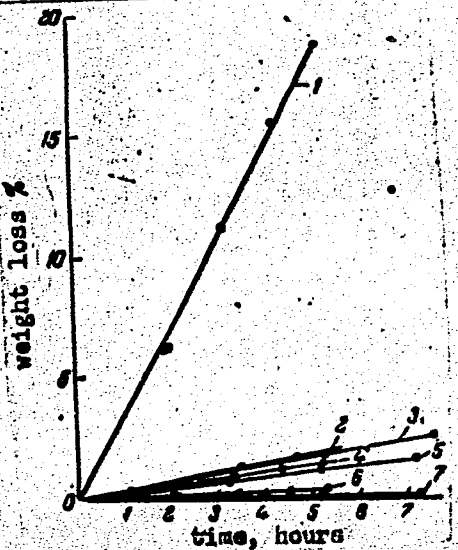

Fig. 1. Relative volatility of methacrylic acid esters. 1 - methyl; 2 - amyl; 3 - n-chloroethyl; 4 - isoamyl; 5 - hexyl; 6 - octyl; 7 - β-oxyethyl.

β-oxyethyl plastic is cheaper to manufacture than the cyclohexyl plastic, but requires closer temperature control for its production. Orig. art. has: 1 table and 1 graph.

SUB CODE: 11, 07/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 002

Card 2/2

NOVOZHILOV, A.Ya., kand.tekhn.nauk

Determining the efficiency of centrifugal pumps operated on an alternating schedule. Sudostroenie 24 no.3:30-32 Mr '58.
(Centrifugal pumps) (MIRA 11:4)

SOV/137-59-2-2710

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 2, p 65 (USSR)

AUTHOR: Novozhilov, B.

TITLE: Some Problems of the Economy of Non-ferrous Metallurgy (Nekotoryye problemy ekonomiki tsvetnoy metallurgii)

PERIODICAL: Narodnoye kh-vo Kazakhstana, 1958, Nr 4, pp 38-43

ABSTRACT: The author examines the methods of appraisal of nonferrous-metals deposits. There are two types of appraisals: The preliminary and the comparative. To make a preliminary appraisal it is necessary to know the requirements of the country's national economy for the minerals contained in the ores of the given deposit. For a comparative appraisal it is necessary to know numerous factors determining the technical and economic character of the contemplated enterprise.

T. K.

Card 1/1

SOV-127-58-8-3/27

AUTHORS: Pervushin, S.A., Doctor of Economic Sciences, Professor; ~~Novozhilov, B.F.;~~ Zubrilov, L.Ye., Candidate of Technical Sciences

TITLE: Bases for the Appraisal of Mineral Deposits and Mines (Osnovy otsenki mestorozhdeniy poleznykh iskopayemykh i rudnikov)

PERIODICAL: Gornyy zhurnal, 1958, Nr 8, pp 18-27 (USSR)

ABSTRACT: Professor K.L. Pozharitskiy published an article under the above-mentioned title, for discussion in Nr 9 (1957) of this periodical. This article is an answer by 3 different authors. Professor S.A. Pervushin says that Pozharitskiy has a wrong conception of the economic appraisal of mineral deposits and mines, because he does not sharply separate the socialist economy from the capitalist economy, considering the problem of appraisal without reference to the basic rules of development of the socialist economy, in particular the Soviet mineral and raw material economy. Pozharitskiy ignored the experience of Soviet projects institutions as Giprokhim (A.M. Levin, A.D. Shapiro and others) Giprotsvetmet (Ya.S. Gol'din, Yu.B. Malevskiy, D.D. Ognev) Giproalyuminiy (G.A.Mikhel'son, M.F. Purits), Gipronikel' (L.S. Kul'nitskiy, D.M. Rura), Gipromez (V.O.

Card 1/2

Bases for the Appraisal of Mineral Deposits and Mines SOV-127-58-8-3/27

Chernyavskiy) and others. The second author, B.F. Novozhilov, bases his criticism on the same lines as the first author. The third author, L.Ye. Zubrilov, finds all propositions made by Pozharnitskiy to be highly controversial. There are 13 references, 11 of which are Soviet and 2 American.

ASSOCIATION: Moskovskiy institut tsvetnykh metallov i zolota (The Moscow Institute of non-ferrous metals and gold). Gosplan Kaz.SSR (The Kazakh SSR Gosplan). Gorno-geologicheskiy institut UFAN (The UFAN Mining-Geological Institute).

1. Minerals--Economic aspects 2. Mines--Economic aspects

Card 2/2

NOVOZHILOV, B.F.; PARAMONOV, I.V.; ROZHKOV, N.G., red.; KUZEMBAYEVA, A.I., tekhn. red.

[Nonferrous metallurgy in Kazakhstan] TSvetnaia metallurgiia Kazakhstana. Alma-Ata, Kazakhskoe gos. izd-vo, 1960. 34 p. (MIRA 14:7)

(Kazakhstan--Nonferrous metals--Metallurgy)

NOVOZHILOV, B.F.

Correction of inaccuracies in calculating the costs of lead, zinc and copper concentrates. TSvet.met. 34 no.9:48-51 S '61.
(MIRA 14:10)

(Ore dressing--Costs)

NOVOZHILOV, B.F.

Quality of nonferrous metal ores and the profitableness of production. Gor. zhur no.4:26-31 Ap '63. (MIRA 16:4)

1. Nachal'nik planovo-ekonomicheskogo upravleniya Kazakhskogo soveta narodnogo khozyaystva.
(Mining engineering--Costs) (Ores)

KISELEV, A.V., inzh.; NOVOZHILOV, B.M., inzh.

Tap switch of an arc-quenching coil manufactured by Brown-Bowery. (MIRA 18:3)
Elek. sta. 36 no.1:85-86 Ja '65.

Novozhilov, B.V.

AUTHOR: Novozhilov, B.V. 56-5-35/46

TITLE: Aging Equation for γ-Quanta (Vozrastnoye uravneniye dlya γ-kvantov)

PERIODICAL: Zhurnal Eksperim. i Teoret.Fiziki, 1957, Vol. 33, Nr 5, pp 1287-1289 (USSR)

ABSTRACT: Theoretically an equation is derived for the distribution function of multiply scattered γ-quanta of low energies ($E \ll m_0c^2$), which is analogous to the aging equation for neutrons. It is written down as follows: $\partial q(\vec{r},\tau)/\partial\tau = \nabla^2 q(\vec{r},\tau) - \chi(\tau) q(\vec{r},\tau)$ where τ denotes the aging of the γ-quanta and $q(\vec{r},\tau)$ - the moderation density. The spatial distribution and the distribution of the wave length agree satisfactorily with the numerical values of the computed kinetic equation by Goldstein (ref.3). There are 1 figure, 1 table, and 3 references, 1 of which is Slavic.

ASSOCIATION: Institute of Physical Chemistry AN USSR (Institut khimicheskoy fiziki Akademii nauk SSSR,

SUBMITTED: June 6, 1957

AVAILABLE: Library of Congress

Card 1/1

NOVOZHILOV, B V

PHASE I BOOK EXPLOITATION SOV/5065

Leypunskiy, Ovsey Il'ich, Boris Vasil'yevich Novozhilov, and Vsevolod Nikolayevich Sakharov

Rasprostraneniye gamma-kvantov v veshchestve (Propagation of Gamma-Ray Quanta in Matter) Moscow, Fizmatgiz, 1960. 207 p. 6,000 copies printed.

Ed.: Margulis, U. Ya; Tech. Ed.: Murashova, N. Ya.

PURPOSE: This book is intended for physicists, engineers, and advanced students concerned with the applications of nuclear physics in industry, as well as with the applications of radio isotopes.

COVERAGE: The book discusses the theory of γ-quanta propagation and absorption in matter, taking into account the multiple scattering of quanta. It gives the quantitative characteristics (calculated and experimental) of γ-rays for the various representative cases of radiation propagation: propagation in an infinite medium, passage through a layer of finite thickness, reflection from the boundary surface (albedo), etc. Data are given on the attenuation, and the spectral and angular distribution of γ-radiation.

Card ~~1/4~~

80099
S/020/60/131/06/48/071
B011/B005

26.5000
11.1000

AUTHOR: Novozhilov, B. V.

TITLE: Rate of Burning of a 2-Component Mixed Powder Model

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 131, No. 6, pp. 1400 - 1403

TEXT: The author describes the process of burning of model powder forming a mechanical mixture of two substances with different properties. Black gunpowder consisting of coal (fuel) and saltpeter (oxidizer) may serve as an example. If the two components strongly differ with respect to their gasification temperatures, and the grains of the more difficultly gasifiable component are sufficiently small, the oxidizer on its gasification will carry the grains along into the gas phase. During their movement, the grains react with the oxidizer which rereduces their volume. The concentration of the oxidizer in the gas is also reduced. The heat developed in the reaction is used for heating and accelerating the gas, and for heating and gasifying new portions of solid powder (Refs. 1,2). There is a dependence of the burning rate on pressure and grain size in 2 limiting cases: 1) The burning rate is determined by the diffusion of the oxidizer into the grains (diffusion case); 2) the burning rate is determined by the

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80099

Rate of Burning of a 2-Component Mixed Powder Model S/020/60/131/06/48/071
B011/B005

kinetics of the chemical reaction (kinetic case). If the burning time of a grain is assumed to be the duration of reaction it appears that in case 1) the burning rate is equal to the square root of pressure, and inversely proportional to the grain size, whereas in case 2) it is inversely proportional to the square root of the grain size. In his paper, the author derives equations (1) - (20) for the absolute burning rate of the powder mentioned in the title. A more rigorous interpretation of physical factors slightly modifies the dependence of the burning rate on pressure and dispersity. Black gunpowder does not fully correspond to the model discussed since the third component - sulfur - is missing. The calculation of the burning rate for black powder and charcoal gives values which are in good agreement with the experimental data. The author thanks O. I. Leypunskiy for suggesting the subject of the paper, and A. S. Kompaneyets for his advice. There are 5 Soviet references. 4

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences, USSR)

PRESENTED: December 29, 1959, by V. N. Kondrat'yev, Academician

SUBMITTED: December 26, 1959

Card 2/2

30033

S/020/61/141/001/018/021
B119/B108

11.6200

AUTHOR: Novozhilov, B. V.

TITLE: The velocity of the front of an exothermic reaction in a condensed phase

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no 1, 1961, 151 - 153

TEXT: Proceeding from the theory on the propagation of heat of a flame in gases by Ya. B. Zel'dovich and D. A. Frank-Kamenetskiy (ZhFKh, 12, 100, (1938)) the author computed the velocity of the front of exothermic reactions in a condensed phase as it is the case with polymerization reactions. The velocity u of the reaction front was computed on the assumption that the diffusion coefficient be zero. This was necessary since in the example under consideration the diffusion coefficient differed very much from the thermal diffusivity. The relation $pp' + \frac{L}{c\varkappa} f(T,p) = 0$ was found ($p(T) = dT/dx$, L = heat effect of the reaction, c = specific heat, $\varkappa$ = thermal diffusivity, T = reaction temperature). In the case of reaction of zeroth order, $f_0 = Z_0 \exp(-E/RT)$, the velocity is

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APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237610003-8"

30033
S/020/61/141/001/018/021
B119/B108

The velocity of the front of an...

$u_0 = \sqrt{\frac{2Z_0 \varkappa c\ \exp(-E/RT_1)RT_1^2}{LE}}$. In chemical reactions of first order,

$f_1 = Z_1 e^{-ER/T}(1 - \eta)$, the velocity of the reaction front is

$u_1 = \sqrt{\frac{Z_1 \varkappa c e^{-E/RT_1} RT_1^2}{LE}}$ (η = relative concentration of the reaction product)

In the case of an autocatalytic reaction, where

$f = Z_1 e^{-E_1/RT_1}(1 - \ \ ) + Z_2 e^{-E_2/RT}\eta(1 - \eta)$ (9) one finds:

X

Card 2/

30035

The velocity of the front of an... S/020/61/141/001/018/021 B119/B108

$$u = \left\{ \frac{Z_2 \varkappa c \exp(-E_2/RT_1)RT_1^2}{LE \ln\left\{1 + \frac{Z_2}{Z_1}\exp\left(-\frac{E_2 - E_1}{RT_1}\right)\left[\ln\left(1 + \frac{Z_2}{Z_1}\exp\left(-\frac{E_2 - E_1}{RT_1}\right)\right)\right]^{\frac{E_1}{E_2}-1}\right\}} \right\}^{1/2} \quad (13)$$

for $1 + \frac{Z_2}{Z_1}\exp\left(-\frac{E_2 - E_1}{RT_1}\right) \gg e$ и

$$u = \left\{ \frac{Z_2 \varkappa c e^{-E_2/RT_1} RT_1^2}{LE \ln\left[1 + \frac{Z_2}{Z_1}\exp\left(-\frac{E_2 - E_1}{RT_1}\right)\right]} \right\}^{1/2}, \quad (14)$$

for $1 + \frac{Z_2}{Z_1}\exp\left(-\frac{E_2 - E_1}{RT_1}\right) \leqslant e$.

The author thanks G. B. Manelis for suggestions concerning the work, and A. S. Kompaneyets and E. I. Andriankin for their judgement of the work. There is 1 Soviet reference.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: June 7, 1961, by V. N. Kondrat'yev, Academician

Card 3/4

X

NOVOZHILOV, B.V. (Moskva)

Transients in the combustion of gunpowders. PMTF no.5:83-88 S-O '62. (MIRA 16:1)

(Gunpowder)

40046

S/076/62/036/008/007/011
B101/B144

11.7200

AUTHOR: Novozhilov, B. V.

TITLE: Theory of burning of a model powder mixture

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 8, 1962, 1803 - 1806

TEXT: The burning of a powder mixture is studied on the basis of theories advanced by Ya. B. Zel'dovich (Zh. eksperim. i teor. fiz., 12, 498, 1942) and D. A. Frank-Kamenetskiy (Zh. fiz. khimii, 12, 100, 1938) for the case where its components have strongly different thermophysical properties: one component ("fuel") gasifies poorly, the other one ("oxidizer") readily. Theoretical derivation of the burning rate u gives: $u \approx 10^{-5} a^{-1} \sqrt{p}$, where a = radius of the fuel particle, p = pressure. The burning rate so found is smaller, however, by several orders of magnitude than that determined experimentally for black powder. This contradicts the assumptions hitherto made (O. I. Leypunskiy, Zh. fiz. khimii, 34, 177, 1960; B. V. Novozhilov, Dokl. AN SSSR, 131, 1400, 1960) that the fuel particles ignite only in the gaseous phase and that inflammation occurs at any gas temperature.

Card 1/2

S/076/62/036/008/007/011
B101/B144

Theory of burning...

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki (Academy of Sciences USSR, Institute of Chemical Physics)

SUBMITTED: December 27, 1961

Card 2/2

42184
S/076/62/036/011/014/021
B101/B180

11.6700

AUTHOR: Novozhilov, B. V.

TITLE: The combustion rate of a model powder mixture in the diffusion range

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 11, 1962, 2508-2511

TEXT: The combustion rate, u, is calculated for a powder mixture consisting of two components, A and B, having the same rate of gasification, on the following simplifying assumptions: (1) the powder surface is flat, and lies in the plane x=0; (2) the combustion rate is limited by the diffusion rate, i.e., the rate of the chemical reaction is infinite. It is found that $u = 2D\varrho t/\varrho_1 h$, where D is the diffusion coefficient, ϱ the gas density, ϱ_1 the density of the solid powder, h half the layer thickness of one component as a measure of the dispersity; t is calculated from the equation

$$(c/q)(T_1-T_{ev}) = \Phi(t),\ \Phi(t) = (2t/\pi^2\sum_{n=0}^{\infty}\left\{1/(n+1/2)^2\left[\sqrt{\pi^2(n+1/2)^2+t^2}+t\right]\right\}$$

Card 1/2

S/076/62/036/01*/014/021
B101/B180

where c is the specific heat, q the heat effect of the reaction per unit mass of component A, T_1 the combustion temperature, T_{ev} the evaporation temperature; n = 0.1,2,.... $\xi(t)$ is given as follows:

$2t/\pi$	0	0.5	1.0	2.0	3.0	∞
$\xi(t)$	0	0.27	0.37	0.43	0.45	0.50

The combustion rate of the powder investigated is a limiting case. In the diffusion range, it is independent of pressure, and is inversely proportional to h the dispersivity. It applied if $wh^2/Dq \gg 1$, where w is the rate of the chemical reaction ($g/cm^3 \cdot sec$). There are 1 figure and 1 table.

ASSOCIATION: Akademiya nauk SSSR, Institut khimicheskoy fiziki (Academy of Sciences USSR, Institute of Chemical Physics)

SUBMITTED: March 13, 1961

S/020/62/144/006/015/015
B119/B104

11630C (also 3619)

AUTHOR: Novozhilov, B. V.

TITLE: Combustion rate of a mixed powder model

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 144, no. 6, 1962, 1328-1330

TEXT: The combustion rate was calculated for a powder made up of two components which react with one another in the gaseous state, emitting heat. For this purpose, both components were assumed to be at the same temperature and to have the same heat of gas formation. The equation $n = t\left[1 - \left(\frac{\varepsilon}{\tau_1^2}\right)^3 \frac{t^3}{\alpha_0^2 \varphi_0 (\varphi_0 + 2t)^2 \theta^{\varphi_0/t}}\right]^{-1/2}$ was obtained. The relation of the reaction rate to the rate $\varepsilon = Eo/Rq$ of mixing by diffusion is characterized by $n = \frac{h^2 oz}{D}\left(\frac{\tau_1^2}{\varepsilon}\right)^3 \exp(-\varepsilon/\tau_1)$, and $n \sim t$ when $n \ll 1$. The combustion rate is then proportional to the gas pressure and independent of dispersity, in accordance with Ya. B. Zel'dovich's equation (ZhETF, 12,

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Combustion rate of a mixed ... S/020/62/144/006/015/015
B119/B104

498 (1942)), but when the values of n are higher, the combustion rate is independent of n and therefore also independent of the gas pressure which is proportional to n; it is inversely proportional to dispersity. There are 2 figures.

ASSOCIATION: Institut khimicheskoy fiziki Akademii nauk SSSR (Institute of Chemical Physics of the Academy of Sciences USSR)

PRESENTED: February 6, 1962 by V. N. Kondrat'yev, Academician

SUBMITTED: January 30, 1962

Card 2/2

NOVOZHILOV, Bor[illegible] Vas[illegible], kand. [illegible] nauk; FAYNBOYM, [illegible], red.

[Study of the inaccessib[illegible]] Issledovanie nedostupnogo. Moskva, Izd-vo "Znanie," [illegible] (Novoe v zhizni, nauke, tekhnike. Seriia Matematika, Astronomiia, n. [illegible]
[illegible]

NOVOZHILOV, Boris Vasil'yevich; SHUSTOVA, I.B., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[Solid liquids] O tverdykh zhidkostiakh. Moskva, Izd-vo "Znanie," Moskva, 1963. 47 p. (Narodnyi universitet kul'tury: Estestvennonauchnyi fakul'tet, no.5) (MIRA 16:7)
(Solids) (Liquids)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001237610003-8"

ACCESSION NR: AP4013336 S/0020/64/154/003/0690/0691

AUTHOR: Novozhilov, B. V.

TITLE: Temperature dependence of kinetic characteristics of exothermic reactions in the condensed state

SOURCE: AN SSSR. Doklady*, v. 154, n0. 3, 1964, 690-691

TOPIC TAGS: kinetic characteristics, activation energy, temperature dependence, exothermic reactions, explosives

ABSTRACT: It has been found in the study of slow chemical transformations of explosives that the preexponential factor and the activation energy increase with temperature (K. K. Andreyev and A. F. Belyayev, Theory of Explosives, 1960). This increase had been attributed to the existence of chains the length of which increases with temperature. It is assumed in the present paper that these chains are initiated by the thermal reaction of the nonreacted molecules located in the vicinity of the reacted molecule. The probability χ for such initiation is

ACCESSION NR: AP4013336

calculated. It is shown that with properly selected χ the effective values of the activation energy and of the preexponential factor are of the observed order of magnitude and show the observed temperature dependence. "The author is grateful to A. S. Kompaneyets for discussion." Orig. art. has: no figures

ASSOCIATION: Institut khimicheskoy fiziki Akademii Nauk SSSR (Institute for Chemical Physics AN SSSR)

SUBMITTED: 12Sep63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: CH NO REF SOV: 002 OTHER: 000

Card 2/2

NOVOZHILOV, B.V.

Rate of burning of a model powder mixture in the diffusion region. Zhur. fiz. khim. 36 no.11:2508-2511 N'62.
(MIRA 17:5)

1. Institut khimicheskoy fiziki AN SSSR.

S/0207/64/000/003/0139/0144

ACCESSION NR: AP4041203

AUTHORS: Istratov, A. G. (Moscow); Librovich, V. B. (Moscow); Novozhilov, B. V. (Moscow)

TITLE: Concerning the approximation method in the theory of uneven combustion rate of a powder

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1964, 139-144

TOPIC TAGS: combustion rate, combustion stability, computer result, combustion temperature, temperature gradient

ABSTRACT: Analytical expressions for an uneven combustion rate were derived for a powder model with a combustion rate dependent only on the pressure and surface temperature gradient of the condensation phase. Instantaneous and exponential pressure variations were studied. The steady powder combustion rate was investigated for both the linear and exponential dependence on the initial powder temperature. In steady combustion the rate is determined by the initial temperature T_0 and the pressure p, and a relation exists between T_0 and the temperature gradient at the boundary of the condensation phase φ. Knowing this, T_0 was found as a

ACCESSION NR: AP4041203

function of p and φ, and the combustion rate was expressed in these parameters. Ya. B. Zel'dovich (O skorosti goreniya porokha pri peremennom davlenii. PMTF, 1964, No. 3) showed that this could also be done for uneven burning, but in this case φ must be determined from the solution of the thermal conductivity equation in the solid phase. The problem was worked out with the dimensionless variables; it consisted of finding functions determining the uneven combustion rate and the temperature distribution in a solid phase. This had been previously done by a computer using the approximation method of integral equations. The uneven combustion rate was studied for a linear dependence of the powder combustion rate on the initial temperature. For the purpose of illustrating the derived results, uneven combustion rates with a sharp and an exponential decrease of pressure were examined by the approximation method and compared to computer results with satisfactory agreement. Extinguishing of the powder may take place with a rather rapid decrease in the pressure, and an instantaneous decrease leads to a negative radical which is unsolvable. The final portion of the paper is devoted to the study of the uneven combustion rate with an exponential dependence of the powder combustion rate on the initial temperature. The authors thank O. I. Leypunskiy and G. I. Barenblatt for their critique and advice. Orig. art. has: 6 figures and 28 equations.

ASSOCIATION: none

ASSOCIATION: AP4041203

SUBMITTED: 06Mar64

ENCL: 00

SUB CODE: FP

NO REF SOV: 006

OTHER: 001

Card 3/3

L 65001-65 EPA/EPA(s)-2/EWT(m)/EPF(c)/EWP(f)/EWA(c)/ETC(m) WW/JWD

ACCESSION NR: AP5021916 UR/0207/65/000/004/0157/0160

AUTHOR: Novozhilov, B. V. (Moscow)

TITLE: Stability criterion for steady-state powder combustion

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1965, 157-160

TOPIC TAGS: combustion, solid propellant, combustion stability, combustion instability, stability criterion

ABSTRACT: An analysis of solid propellant combustion was made on the basis of a model which was assumed to have a variable propellant surface temperature and a two-stage combustion process during which the propellant is first decomposed and gasified and then reacts in the gas phase to yield the final products (see Fig. 1 of Enclosure). It is assumed that the reactions in the gas and condensed phases take place without inertia. The heat release due to decomposition of the condensed and dispersed phases and that of the gas-phase reaction are considered. Based on the concept that combustion is either stable or unstable when small perturbations of the burning velocity or surface temperature are either damped or amplified, the following stability criteria were derived. Combustion is always stable when $k < 1$; when

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L 65001-65

ACCESSION NR: AP5021916

O

k > 1, it is stable only when

$$r > \frac{(k-1)^2}{k+1};$$

where,

$$k = (T_1 - T_0)\left(\frac{\partial \ln m}{\partial T_0}\right)_p$$

and

$$r = (\partial T_1 / \partial T_0)_p .$$

Here, m is the mass burning rate; φ, temperature profile; T_1, surface temperature; and T_0, initial propellant temperature. It is noted that for steady-state stability analysis only $m(\varphi, p)$ must be known, while under nonsteady-state conditions also $T_1(\varphi, p)$ must be known. Orig. art. has: 3 formulas and 2 figures. [PV]

ASSOCIATION: none

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L 65001-65
ACCESSION NR: AP5021916 0

SUBMITTED: 26Mar65 ENCL: 01 SUB CODE: FP

NO REF SOV: 010 OTHER: 000 ATD PRESS: 4078

Card 3/4

L 65001-65

ACCESSION NR: AP5021916 ENCLOSURE: 01

0

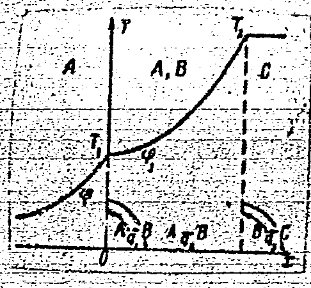

Fig. 1. Solid propellant combustion model

$A \rightarrow B \rightarrow C$ - Two-stage conversion; q_1 - heat released by decomposition on surface; q_2 - heat released by decomposition of dispersed particles; q_3 - heat released by gas-phase reaction; T_2 - combustion temperature.

Card 4/4

L 13879-66 EWT(m)/FBA/ETC(m)-6/EWP(f) WW/JWD

ACC NR: AP6004429 SOURCE CODE: UR/0414/65/000/003/0041/0044

AUTHOR: Novozhilov, B. V. (Moscow)

ORG: none

59
54
B

TITLE: The mean burning velocity during harmonic pressure changes

SOURCE: Fizika goreniya i vzryva, no. 3, 1965, 41-44

TOPIC TAGS: combustion instability, solid propellant, propulsion

ABSTRACT: During slow pressure variation, the temperature profile of a propellant follows the pressure change and the burning velocity has a quasi steady-state value. When the pressure changes rapidly, the temperature profile lags behind the pressure change and the burning velocity assumes a nonsteady-state value. Novozhilov (PMTF, 1962, 5.) and Istratov, Librovich, and Novozhilov (PMTF, 1964, 3.) investigated the latter regime by analyzing the effect of instantaneous or exponential pressure changes or changes caused by a sudden nozzle constriction in a solid propellant motor. In the present study, a model is considered in which the burning velocity of the propellant is a function of the pressure and the temperature gradients on the solid surface only. Expressions were derived for evaluating the deviation of the pressure from the steady-state value during harmonic pressure

Card 1/2 UDC: 532.46

L 13879-66

ACC NR: AP6004429

5

fluctuations. This problem may be important for studying the generation of acoustical oscillations in solid propellant combustion. The analysis showed that for exponential and linear pressure changes, the mean burning velocity in a nonsteady-state regime is lower than the steady-state value at the mean pressure. Orig. art. has: 11 formulas and 1 figure. [PV]

SUB CODE: 21/ SUBM DATE: 02Feb65/ ORIG REF: 005/ ATD PRESS: 4194

Card 2/2

L 14537-66 EWT(m)/FBA WW/JWD

ACC NR: AP6002372 SOURCE CODE: UR/0207/65/000/006/0141/0144

61

B

AUTHOR: Novozhilov, B. V. (Moscow)

ORG: none

TITLE: Powder combustion during harmonic pressure changes

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 6, 1965, 141-144

TOPIC TAGS: combustion instability, solid propellant, propellant, combustion, burning velocity

44,55

ABSTRACT: A theoretical analysis of solid propellant combustion showed that a solid propellant constitutes an oscillating system with a natural frequency and a damping decrement. The model was based on the assumption that the surface temperature T_s depends on the pressure p and the initial temperature T_0. The relationship for the steady state burning velocity $m(T_0,p)$ was then transformed to the relationship for the nonsteady-state burning velocity $m(f,p)$, where f is the temperature gradient at the surface. Relationships in terms of k, r, and m, where

$$k=(T_s^0-T_0)\left(\frac{\partial \ln m^0}{\partial T_0}\right)_p, \quad r=\left(\frac{\partial T_s^0}{\partial T_0}\right)_p,$$

$$\nu=\left(\frac{\partial \ln m^0}{\partial \ln p}\right)_{T_0}, \quad \mu=\frac{1}{T_s^0-T_0}\left(\frac{\partial T_s^0}{\partial \ln p}\right)_{T_0}$$

were derived.

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L 14537-66

ACC NR: AP6002372

It was shown that a stable regime characterized by $k>1$ and $r \geq (k-1)^2/(k+1)$ can be reestablished by relaxation of the nonsteady-state temperature distribution. The time exponent characterizing the approach to the steady-state regime has the form $\exp[\Omega (u^*)^2 \cdot t/\kappa]$, where $u^* = m^*/\rho$ (burning velocity), and

$$\Omega = \frac{(k-1)^2 - r(k+1)}{2r^2} \pm i\frac{k-1}{2r^2}\sqrt{(2k-r+2)r-(k-1)^2}.$$

$\lambda = -\operatorname{Re}\Omega$ is the decrement which characterizes damping of the oscillations.

$$i \operatorname{Im}\Omega = \pm\sqrt{\omega^2 - \lambda^2}$$

characterizes the oscillation frequency. The character of the oscillating regime depends on the ratio λ/ω. When $\lambda \ll \omega$, the damping is small. As r approaches $(k-1)^2/(k+1)$, i.e., at the stability limit, $\lambda \to 0$. Thus, it can be seen that when $k > 1$, the propellant is an oscillating system with a given frequency and damping decrement. When $k < 1$, the steady-state regime is approached aperiodically, i.e., without passing through the steady-state value. Expressions for the burning velocity in the presence of forced harmonic oscillations were also derived and conditions for resonance were analyzed. It was shown that the equations and boundary conditions characterizing resonance are nonlinear, so that all phenomena related to nonlinear oscillations such as ambiguous relationships between the burning velocity and the pressure fluctu-

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L 14537-66

ACC NR: AP6002372

ation frequency, sudden transitions between regimes, and resonance at frequencies not coinciding with the natural frequency can be expected. Orig. art. has: 25 equations. [PV]

SUB CODE: 21/ SUBM DATE: 23Jun65/ ORIG REF: 006/ ATD PRESS: 4197

Card 3/3

NOVOZHILOV, Boris Vasil'yevich, kand. fiz.-matem. nauk; FOYNBOYM, I.B., red.

[Monte Carlo method] Metod Monte-Karlo. Moskva, Znanie, 1966. 46 p. (Novoe v zhizni, nauke, tekhnike IX Seriia: Fizika, Matematika, Astronomiia, no.3) (MIRA 19:1)

ACC NR: AP7000048 SOURCE CODE: UR/0207/66/000/005/0031/0041

AUTHOR: Novozhilov, B.V. (Moscow)

ORG: none

TITLE: Nonlinear fluctuations in the burning velocity of powder

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no.5, 1966, 31-41

TOPIC TAGS: burning velocity, combustion, combustion instability, solid propellant

ABSTRACT: A theoretical analysis was made of nonlinear burning velocity fluctuations in a solid propellant. The model assumed that during harmonic pressure changes the surface temperature of the propellant depends on the pressure and the initial temperature. It was shown that due to the nonlinearity of the heat conduction equation and the dependence of the burning velocity and surface temperature on the pressure and initial temperature, the fundamental frequency of the burning velocity fluctuation changes and higher harmonics of the burning velocity and temperature fluctuations appear. Resonance curves were constructed for the case of nonlinear resonance when the frequency of the pressure fluctuations is close to the natural frequency of the

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ACC NR: AP7000048

propellant. The problem of stability in given sections of the resonance curves must be solved by special investigations because unlike electrical and mechanical systems in which stability conditions are described by ordinary differential equations, in the case of combustion instability, nonlinear partial differential equations are involved with nonlinear relationships between the burning velocity, the temperature, and the temperature gradient at the surface. It was shown that the allowance for nonlinear effects under resonance conditions leads to a dependence of the frequency and the damping decrement on the amplitude of fluctuations. It was shown that self-oscillating combustion regimes are possible at a constant pressure. The author thanks Ya. B. Zel'dovich, G. I. Barenblatt, A. S. Kompaneyts, and O. I. Leypunskiy for discussions of and advice on the investigated problems. Orig. art. has: 59 formulas and 5 figures. [WA-68]

SUB CODE: 21/ SUBM DATE: 02Jun66/ ORIG REF: 007/ OTH REF: 001

Card 2/2

NOVOZHILOV, D.A. prof. (Leningrad, P-183, Naberezhnaya Chernoy rechki, d.24. kv.39)

Pain and its significance in injuries. Ortop. travm. i protez. 24 no.6:3-11 Je '63 (MIRA 16:12)

NOVOZHILOV, D. A.

Traumatic Myogelosis as a Complication in Hip Fractures"

Trudy Voyenno-Morskoy Med Akad., Vol X, 1948.
S461

NOVOZHILOV, D.A.; BAIROV, G.A.

Minutes of sessions of the Leningrad Scientific Society of Traumatologists and Orthopedists. Vest. khir. 74 no.5:90-93 Jl-Ag '54. (MLRA 7:10)

(LENINGRAD--TRAUMATISM--SOCIETIES)
(LENINGRAD--ORTHOPEDIA--SOCIETIES)
(TRAUMATISM--SOCIETIES--LENINGRAD)
(ORTHOPEDIA--SOCIETIES--LENINGRAD)

NOVOZHILOV, D.A., professor

Professor S.A.Novotel'nov. Ortop., travm. i protez. 17 no.4:70-71 Jl-Ag '56. (MLRA 9:12)

1. Predsedatel' Leningradskogo obshchestva ortopedov i travmatologov. (NOVOTEL'NOV, SERGEI ABRAMOVICH)

NOVOZHILOV, D.A., professor

A short historical survey on the development of orthopedics in St.Petersburg-Leningrad. Ortop., travm.protez. 17 no.5:44-49 S-O '56. (MLRA 10:1)

(ORTHOPEDICS, hist.
in Russia)

EXCERPTA MEDICA Sec 8 Vol 12/7 Neurology July 59

3216. PROPHYLAXIS AND TREATMENT OF SEQUELAE OF POLIOMYELITIS (Russian text) - Novozhilov D. A. - ORTOP. TRAVM. I PROTEZ. 1957, 5 (15-22)

A report is issued on the treatment of 2,000 children, both during convalescence and suffering from residual defects of poliomyelitis. Absolute rest on a flat bed with the limbs in a comfortable position is imperative in the acute stage. Immobilization of the limbs, physiotherapeutic exercises and thermal treatment are recommended after the disappearance of pain. Contractures may be overcome by extension of the contracted muscles. If this fails, surgical interference is indicated: in muscular paralysis, in arthrodesis, in stationary flexion contractures of the knee joint, in supracondylar osteotomy with the subsequent use of an orthopaedic appliance. To replace paralysed extensors of the leg, a bilateral transplantation of still functioning flexors is recommended. This operation is contra-indicated where the contracture is 170°. Transplantation of the foot muscles should be combined with arthrodesis. Where the leg is shortened, osteotomy of the tibia and fibula is performed, with subsequent extension. (S)

NOVOZHILOV, D.A., professor (Leningrad)

Progress of pediatric orthopedics and traumatology in the U.S.S.R.
Ortop., travm. i protes. 18 no.1:3-9 Ja-F '57. (MLRA 10:6)
(WOUNDS AND INJURIES in inf. and child
progr. of pediatric traumatol. in Russia)
(ORTHOPEDICS
progr. of pediatric orthopedics in Russia)
(PEDIATRICS
progr. of pediatric orthopedics & traumatol. in Russia)

NOVOZHILOV, Dmitriy Antonovich

[Problem of pain in traumatology and orthopedics] Nekotorye voprosy problemy boli. Leningrad, Medgiz, 1958. 134 p. (MIRA 12:3)

(ORTHOPEDIA) (PAIN) (WOUNDS)

MIKHAYLOVSKAYA, L.A., kand.biol.nauk, NOVOZHILOV, D.A., prof. IVANOV, I.I., prof.

Biochemical studies of the muscle in poliomyelitis and their significance for the clinician. Ortop.travm. i protez. 19 no.3:28-32 My-Je '58 (MIRA 11:7)

1. Iz nauchno-issledovatel'skogo detskogo ortopedicheskogo instituta im. G.I. Turnera i kafedry biokhimii Leningradskogo pediatricheskogo meditsinskogo instituta.

(POLIOMYELITIS, pathol.
musc., biochem. changes (Rus))
(MUSCLE, pathol.
in poliomyelitis, biochem. changes (Rus))

NOVOZHILOV, D.A., prof. (Leningrad)

Genrikh Ivanovich Turner (1858-1941). Ortop.travm. i protez. 19 no.5:3-9 S-O '58 (MIRA 11:12)

(TURNER, GENRIKH IVANOVICH, 1858-1941)

IVANOV, I.I.; YUR'YEV, V.A.; NOVOZHILOV, D.A.; MIKHAYLOVSKAYA, L.A.;
KRYMSKAYA, B.M.

Biochemical determination of the functional condition of muscles in poliomyelitis. Vop.med.khim. 5 no.4:243-250 Jl-Ag '59. (MIRA 12:12)

1. Kafedra biokhimii Leningradskogo pediatricheskogo meditsinskogo instituta i biokhimicheskaya laboratoriya Nauchno-issledovatel'skogo detskogo ortopedicheskogo instituta imeni G.I. Turnera.
(POLIOMYELITIS pathol.)
(MUSCLE PROTEINS)

NOVOZHILOV, D.A.

Kh. I. Turner. Khirurgiia, Sofia 12 no.1:83-88 1959.
(BIOGRAPHIES,
Turner, Genrikh I. (Bul))

NOVOZHILOV, D.A., prof.

A further development of medical science. Ortop.travm. i protez. 20 no.3:3-6 Mr '59. (MIRA 12:6)

1. Predsedatel' pravleniya Leningradskogo obshchestva travmatologov i ortopedov.
(MEDICINE
in Russia (Rus))

NOVOZHILOV, D.A., prof.

Basic questions in the organization of treatment of poliomyelitis in children. Ortop.travm.i protez. 20 no.8:3-8 Ag '59. (MIRA 12:11)

1. Iz Nauchno-issledovatel'skogo detskogo ortopedicheskogo instituta im. G.I. Turnera (dir. - prof. M.N. Goncharova).
(POLIOMYELITIS, therapy)

NOVOZHILOV, D.A., prof.

Professor E.IU. Osten-Saken; on the 20th anniversary of his death.
Ortrop.travm.i protez. 21 no.4:94 Ap '60. (MIRA 13:9)
(OSTEN-SAKEN, EMILII IUL'EVICH, d.1939)

NOVOZHILOV, D.A., prof. (Leningrad)

Polyclinical orthopedic assistance for children and measures for its improvement. Ortop.travm.i protez. 21 no.5:65-69 My '60. (MIRA 13:9)

(ORTHOPEDICS)

NOVOZHILOV, D.A., prof.

Cradle of children's orthopedics, the G.I. Turner Institute (on the 70th anniversary of its founding). Ortop.travm.i protez. no.6:76-84 '61. (MIRA 14:8)

1. Iz Detskogo ortopedicheskogo instituta im. G.I. Turnera (dir. - prof. M.N. Goncharova, zam. direktora - prof. D.A. Novozhilov).

(ORTHOPEDICS--HOSPITALS AND INSTITUTIONS)

NOVOZHILOV, D.A., prof.

Pediatric orthopedic institution. Vop. okh. mat. i det. 6 no.5: 76-80 My '61. (MIRA 14:10)

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1. Iz Gosudarstvennogo nauchno-issledovatel'skogo detskogo ortopedicheskogo instituta im. G. I. Turnera (dir. - prof. M. N. Goncharova).

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